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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/687,507	10/15/2003	Nan Marie Jockerst	62004-1211	9028

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EXAMINER

PHAN, HANH

ART UNIT PAPER NUMBER

2638

DATE MAILED: 09/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/687,507	Applicant(s) JOCKERST ET AL.	
	Examiner Hanh Phan	Art Unit 2638	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 October 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-9 and 11-13 is/are rejected.
- 7) ☒ Claim(s) 5 and 10 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. This Office Action is responsive to the Amendment filed on 06/27/2005.

#### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-4, 6-9 and 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuji et al (US Patent No. 5,664,035) in view of de Cesare et al (US Patent No. 5,682,037) and further in view of Gray (US Patent No. 5,266,155).

Regarding claims 1 and 6, referring to Figures 1, 2b and 4b, Tsuji discloses a bi-directional optical link (Fig. 1), comprising:

a detector (221)(Fig. 1) having an upper surface facing a predetermined direction to receive incident light; and

an emitter (222)(Fig. 1) stacked over the upper surface and oriented to direct a beam of light toward the predetermined direction ( see col. 4, lines 36-46 and col. 5, lines 4-62).

Tsuji differs from claims 1 and 6 in that he fails to teach a detector is a thin film detector and an emitter is a thin film emitter. However, de Cesare teaches a detector is a thin film detector (see abstract section), and Gray teaches an emitter is a thin film

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emitter (Fig. 3, col. 5, lines 7-9). Therefore, it would have been obvious to one having skill in the art at the time the invention was made to incorporate the detector is a thin film detector and the emitter is a thin film emitter as taught by de Cesare and Gray in the system of Tsuji. One of ordinary skill in the art would have been motivated to do this since de Cesare suggests in abstract section and Gray suggests in column 5, lines 7-9 that using such the detector is a thin film detector and the emitter is a thin film emitter have advantage of allowing decreasing optical loss and increasing collection, reducing weight, size and cost of the whole of system.

Regarding claims 2 and 7, the combination of Tsuji, de Cesare and Gray teaches the thin film emitter is a vertical cavity surface emitting laser (see col. 4 of Tsuji, lines 58-62).

Regarding claims 3 and 8, the combination of Tsuji, de Cesare and Gray teaches the thin film emitter is a light emitting diode (Fig. 3 of Gray).

Regarding claims 4 and 9, the combination of Tsuji, de Cesare and Gray teaches the thin film emitter further comprises a pair of electrical connectors for electrically coupling the thin film emitter to a circuit (see Fig. 3 of Gray).

Regarding claim 11, the combination of Tsuji, de Cesare and Gray teaches the thin film detector and the thin film emitter comprise a substrate-removed semiconductor material (Fig. 1b of de Cesare).

Regarding claim 12, the combination of Tsuji, de Cesare and Gray teaches the step of stacking comprises stacking to occlude a portion of the thin film detector (Fig. 1b of de Cesare).

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Regarding claim 13, the combination of Tsuji, de Cesare and Gray teaches the step of orienting comprises orienting the thin film emitter to emit the beam of light while the detector receives the incident light (Fig. 3 of Gray).

4. Claims 1-4, 6-9 and 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krause (US Patent No. 5,448,077) in view of de Cesare et al (US Patent No. 5,682,037) and further in view of Gray (US Patent No. 5,266,155).

Regarding claims 1 and 6, referring to Figure 8, Krause discloses a bi-directional optical link, comprising:

a detector (221)(Fig. 8) having an upper surface facing a predetermined direction to receive incident light; and

an emitter (156)(Fig. 8) stacked over the upper surface and oriented to direct a beam of light toward the predetermined direction (col. 3, lines 8-24).

Krause differs from claims 1 and 6 in that he fails to teach the detector is a thin film detector and the emitter is a thin film emitter. However, de Cesare teaches a detector is a thin film detector (see abstract section), and Gray teaches an emitter is a thin film emitter (Fig. 3, col. 5, lines 7-9). Therefore, it would have been obvious to one having skill in the art at the time the invention was made to incorporate the detector is a thin film detector and the emitter is a thin film emitter as taught by de Cesare and Gray in the system of Tsuji. One of ordinary skill in the art would have been motivated to do this since de Cesare suggests in abstract section and Gray suggests in column 5, lines 7-9 that using such the detector is a thin film detector and the emitter is a thin film

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emitter have advantage of allowing decreasing optical loss and increasing collection, reducing weight, size and cost of the whole of system.

Regarding claims 2 and 7, the combination of Krause , de Cesare and Gray teaches the thin film emitter is a vertical cavity surface emitting laser (Fig. 3 of Gray).

Regarding claims 3 and 8, the combination of Krause, de Cesare and Gray teaches the thin film emitter is a light emitting diode (Fig. 3 of Gray).

Regarding claims 4 and 9, the combination of Krause, de Cesare and Gray teaches the thin film emitter further comprises a pair of electrical connectors for electrically coupling the thin film emitter to a circuit (Fig. 3 of Gray).

Regarding claim 11, the combination of Krause, de Cesare and Gray teaches the thin film detector and the thin film emitter comprise a substrate-removed semiconductor material (Fig. 1b of de Cesare).

Regarding claim 12, the combination of Kraus, de Cesare and Gray teaches the step of stacking comprises stacking to occlude a portion of the thin film detector (Fig. 1b of de Cesare).

Regarding claim 13, the combination of Krause, de Cesare and Gray teaches the step of orienting comprises orienting the thin film emitter to emit the beam of light while the detector receives the incident light (Fig. 1 of Tsuji).

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***Allowable Subject Matter***

5. Claims 5 and 10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

6. Applicant's arguments with respect to claims 1-13 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh Phan whose telephone number is (571)272-3035.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Vanderpuye, can be reached on (571)272-3078. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-4700.

  
**HANH PHAN**  
**PRIMARY EXAMINER**